

In the Claims

Claims are amended as follows:

1. (currently amended) A method of transmitting symbols in a wireline multi-carrier communication system in which each symbol is modulated for transmission over a carrier group of ~~pre-determined~~ known size, the method comprising the steps of:
 identifying all available carrier groups; and
 transmitting a replicate of the symbol on each of at least half of the available carrier groups.

2. (currently amended) A method according to claim 1 wherein the replicate of the symbol is transmitted on each of all available carrier groups.

3. (currently amended) A method according to claim 1 additionally comprising the ~~steps~~ step of:

 applying a ~~pre-determined~~ phase-shift to ~~the symbol transmitted on at least one~~ each of said at least half of the available carrier groups, whereby to mitigate peaks in transmitted instantaneous signal power across ~~all carriers~~ said at least half of the available carrier groups.

4. (currently amended) A method according to claim 2 wherein ~~all replicates are~~ each replicate of the symbol transmitted on each of all available carrier groups is phase-shifted relative to ~~each~~ another replicate.

5. (currently amended) A method according to claim 1 additionally comprising the step of:

for at least one of said at least half of the available carrier groups, phase-shifting a symbol portion transmitted on a first carrier in the carrier group relative to a second carrier in the carrier group, whereby to mitigate peaks in transmitted signal power across all said at least half of the available carrier groups.

6. (currently amended) A method according to claim 4 5, wherein ~~all signal portions~~ each symbol portion within a carrier group ~~are~~ is phase-shifted relative to ~~each~~ other symbol portions of said carrier group.

7. (currently amended) A method according to claim 4 5, wherein the step of phase-shifting is applied to all of said at least half of the available carrier groups.

8. (original) A method of transmitting initialisation messages in a wireline multi-carrier communication system, the method comprising the steps of:
 partitioning an initialisation message into one or more symbols;
 modulating one of the symbols for transmission over a carrier group of known size;
 identifying all available carrier groups; and
 transmitting a replicate of said one of the symbols on each available carrier group.

9. (currently amended) A method according to claim 7 8, wherein the initialisation messages are ~~DSL~~ Digital Subscriber Line (DSL) messages

10. (currently amended) A method according to claim 7 8 wherein the initialisation messages are selected from the group consisting of Very High Speed Digital Subscriber Line (VDSL), and Asymmetric Digital Subscriber Line (ADSL), ~~G.Lite and G.DMT~~ messages.

11. (currently amended) A transmitter for a wireline multi-carrier communication system comprising:

 a modulator for modulating symbols for transmission over a pre-determined number of carriers; ~~and~~

 a carrier allocator arranged to identify all available carrier groups having the pre-determined number of carriers; and

 a replicator arranged to output a replicate of each of the symbols on each of the available carrier groups.

12. (currently amended) A modem ~~for a wireline multi-carrier communication system~~ comprising a the transmitter according to claim ~~40~~ 11.

13 – 16 (cancelled)

17. (currently amended) A transmitter according to claim ~~40~~ 11 additionally comprising;

~~_____~~ a phase shifter wherein the replicator is arranged to determine the transmission phase on the available carrier responsive to pre-determined carrier phase-shift data.

18 – 19 (cancelled)

20. (currently amended) A program for a computer on a machine readable medium for transmitting symbols in a wireline multi-carrier communication system in which each symbol is modulated for transmission over a carrier group of ~~pre-determined~~ size known, the program being arranged to perform the steps of:

 identifying all available carrier groups; and

transmitting a replicate of the symbol on each of at least half of the available carrier groups.

21. (original) A program for a computer on a machine readable medium for transmitting initialisation messages in a wireline multi-carrier communication system, the program being arranged to perform the steps of:

partitioning an initialisation message into one or more symbols;
modulating one of the symbols for transmission over a carrier group of known size;
identifying all available carrier groups; and
transmitting a replicate of said one of the symbols on each available carrier group.

22. (currently amended) A method of establishing a connection between a transmitter and a receiver in a wireline communication system, the method comprising the steps of:

at the transmitter, partitioning a connection initialisation message into one or more symbols, modulating each symbol for transmission over a carrier group of predetermined size, identifying all available carrier groups, and transmitting a replicate of each symbol on at least half the available carrier groups; and at the receiver, receiving said replicates of each symbol, reconstructing the initialisation message from said received replicate symbols, and opening the connection in response to the initialisation message.

23. (withdrawn) A method of receiving symbols in a wireline multi-carrier communication system in which each symbol is modulated for transmission over a carrier group of pre-determined size, the method comprising the steps of:

receiving signals on a plurality of carrier groups;

selecting one or more of the plurality of carrier groups responsive to a measure of respective signal quality;

recovering a symbol from signals received on the at least one of the plurality of carrier groups.

24. (withdrawn) A method to claim 22 in which the step of recovering comprises the step of:

summing the signals received on the at least one of the plurality of carrier groups.

25. (withdrawn) A receiver for a wireline multi-carrier communication system comprising:

a carrier receiver arranged to receive signals on a plurality of carrier groups;

a carrier group selector arranged to select at least one of the plurality of carrier groups, responsive to a measure of respective signal quality;

a symbol recovery unit arranged to recover symbols from the at least one of the plurality of carrier groups.